CLAIMS

1. A syringe injection shield for use with a radiopharmaceutical and a safety syringe having a barrel, a needle, a plunger, finger tabs and a needle sheath, wherein the barrel and the needle are movable between an extended position wherein the needle is exposed to a retracted and locked position wherein the needle is protected by the needle sheath, the syringe injection shield comprising:

a generally tubular member sized to receive a portion of the barrel and a portion of the needle sheath of the safety syringe;

a toggle housing in the tubular member; and

a movable toggle element mounted on a shaft in the toggle housing, the toggle element having a neutral position, a ready position, a hold position and a release position, the toggle element being in the neutral position when there is no safety syringe in the tubular member, the toggle element being in the ready position when the safety syringe is inserted into the tubular member, the toggle element being in the hold position when the barrel is in a locked position relative to the needle sheath and the toggle element being in the release position when the safety syringe is removed from the tubular member.

2. The apparatus of claim 1, wherein the length of the tubular member is less than a distance from the finger tabs to the end of the barrel to permit visual observation of blood when the plunger is pulled back to confirm that the needle is properly positioned in a blood vessel.

3. The apparatus of claim 2, further including a spring in the toggle housing to urge the toggle element into the neutral position when there is no safety syringe in the tubular

member.

4. The apparatus of claim 3, wherein the movable toggle element has a release tang, an elongate tang and a contact point to engage the needle sheath, the elongate tang being depressed when the toggle element is in the hold position while the barrel is locked relative to the needle sheath, and the release tang being depressed when the toggle element is in the release position in order to remove the safety syringe from syringe injection shield, after the syringe has been made safe.

5. The apparatus of claim 1, wherein pressure on the elongate tang of the toggle element is from about 13 to about 20 pounds when the toggle element is in the hold position.

6. The apparatus of claim 1, wherein pressure on the elongate tang of the toggle element is from about 13 pounds to about 18 pounds when the toggle element is in the hold position.

7. The apparatus of claim 1, wherein pressure on the elongate tang of the toggle element is about 16 pounds to about 17 pounds when the toggle element is in the hold position.

8. A method to make safe a safety syringe while the syringe is in a syringe injection shield, the method comprising:

insertion of a safety syringe into a syringe injection shield, the safety syringe having a barrel, a needle, a plunger, finger tabs, and a needle sheath wherein the barrel and the needle are movable between an extended position wherein the needle is exposed to a retracted position wherein the needle is covered by the needle sheath;

administering a radiopharmaceutical to a patient;

moving the needle and barrel from the extended position to the retracted position;

rotating the barrel and finger tabs relative to the needle sheath while the toggle

element is in the hold position to lock the needle and barrel in the retracted position in the needle sheath; and moving the toggle element to a release position while removing the safety syringe from the syringe injection shield.

9. The method of claim 8, further including pulling back on the plunger to visually determine if the needle is properly positioned in a blood vessel.

10. A method to make safe a safety syringe while the syringe is in a syringe injection shield, the method comprising:

insertion of a safety syringe into a syringe injection shield, the safety syringe having a barrel, a needle, a plunger, finger tabs, and a needle sheath, wherein the barrel and the needle are movable between an extended position wherein the needle is exposed to a retracted position wherein the needle is covered by the needle sheath;

administering a radiopharmaceutical to a patient;

moving the needle and barrel from the extended position to the retracted position; pulling the barrel and finger tabs relative to the needle sheath while the toggle

element is in the hold position to lock the needle and barrel in the retracted position in the needle sheath; and

moving the toggle element to a release position while removing the safety syringe from the syringe injection shield.

11. The method of claim 10, further including pulling back on the plunger to visually determine if the needle is properly positioned in a blood vessel.

12. A combination comprising:

a safety syringe having a barrel, a needle, a plunger, finger tabs, a needle sheath and locking assembly, the barrel and the needle being movable between an extended position wherein the needle is exposed to a retracted and locked position wherein the needle is protected by the needle sheath; and

a syringe injection shield having:

a generally tubular member sized to receive a portion of the barrel and a portion of the needle sheath of the safety syringe;

a toggle housing in the tubular member; and

a movable toggle element mounted on a shaft in the toggle housing, the toggle element having a neutral position, a ready position, a hold position and a release position, the toggle element being in the neutral position when there is no safety syringe in the tubular member, the toggle element being in the ready position when the safety syringe is inserted into the tubular member, the toggle element being in the hold position when the needle and barrel are moved to the locked position and the toggle element being in the release position when the safety syringe is removed from the tubular member.